Remarks

Applicant respectfully requests the Examiner to reconsider the present application in view of the foregoing amendments to the claims and the following remarks.

The Office Action is non-final. Claim 14 has been cancelled. Claims 1-13 and 15-18 are currently pending in the present application. Claims 1, 2, 6, 10-13 and 15-17 have been amended to further clarify and define the invention. The common amendment to claims 6, 10-13 and 15-17 is found on page 7, lines 6-7 of the present specification. Claim 18 is new. Support for claim 18 can be found on page 9, lines 18-24 of the present specification, and claim 1.

Entry of the present Amendment is respectfully requested.

Information Disclosure Statement (IDS)

Applicant notes that the PTO-1449 Form for the IDS dated August 21, 2006, reference AJ (JP 3107831) was lined through, indicating that the reference was not considered by the Examiner.

Applicants have submitted a machine translation of JP 3107831 within a concurrently filed IDS, so that the document can be considered. Applicant respectfully requests that the Examiner consider JP 3107831 in view of its machine translation.

Request for Acknowledgement of Priority under 35 U.S.C. 119

For item 12 on the Office Action Summary page of the Office Action dated October 8, 2009, the Examiner acknowledged the claim for foreign priority. However, the Examiner also indicated that no certified copy of the priority document had been received.

Applicant notes that Form PCT/IB/301 was filed on June 14, 2006, which indicates that a certified priority document was received by WIPO.

Applicant also notes that the Notice of Acceptance dated July 25, 2007 confirms that the priority document submitted on June 14, 2006 was received by the USPTO. Additionally,

Applicant notes that on the USPTO website PAIR system, the priority document was received from WIPO on July 19, 2007.

Applicant therefore respectfully requests that the Examiner acknowledge receipt of the certified copy of the foreign priority document.

Claim Objection

Claims 6 and 10-17 are objected to by the Examiner due to informalities. Claim 14 has been cancelled thus rendering the objection moot with regard to this claim. Applicant has amended claims 6, 10-13 and 15-17 to "wherein said cells are formed at a density of 20-30 cells/mm^2." Support for this common amendment is indicated above.

Applicant requests reconsideration and withdrawal of the above objection.

Rejection Under 35 U.S.C §112, Second Paragraph

Claims 1 and 2 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicant respectfully traverses the rejection.

The Examiner indicates that claims 1 and 2 recite "directly or indirectly," and that it is not clear to the Examiner how foam can be in indirect contact with a human body.

Applicant submits that the wording "direct contact with a human body" means that the foam contacts with a human body itself, namely a naked body. On the contrary, "indirect contact with a human body" means that the foam contacts with a human body through an intermediate object such as clothing, *etc.* as described at [0016] in the specification:

> *[0016] The form of the activated foam may be a small, portable and handy triangle, bed clothing-like form such as a mat to lay on or a mat to cover, or as a portion or the whole e.g. of a suit, but is not limited thereto if the form makes it possible for the foam to directly or indirectly contact with a human body. If it is desired to give such effects as for curing diseases, concentrated locally on a portion of a human body, the activated foam could be formed into a sheet shape having a thickness of about 8 mm to 5 cm. When it is used as a clothing material, forming the foam into a sheet shape having a thickness of about 0.3 to 5mm facilitates the making thereof into clothing.*

Further, the Examiner indicates that claims 1 and 2 are further objected to since it is not understood if the pharmaceutical within the claim is incorporated within the foam, is in contact with the foam or is simply utilized at the same time as the foam.

Applicant has amended claims 1 and 2 to indicate that the pharmaceutical within the claims is utilized at the same time as the foam.

Therefore based on the above, Applicant submits that the claims particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Applicant requests reconsideration and withdrawal of the present rejection.

Rejection Under 35 U.S.C §103(a)

Claims 1-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lever *et al.*, U.S. Patent No. 6,455,610 (hereinafter "Lever"), in view of Gray, U.S. Patent No. 3,644,235 (hereinafter "Gray") and in further view of Ito *et al.*, U.S. Patent No. 7,056,883 (hereinafter "Ito").

Applicant respectfully traverses the rejection.

The Examiner's Position

The Examiner asserts that although the Lever reference does not teach the foam rubber densities, as in claim 6, and that Lever does not teach pharmaceuticals discussed in claims 1-5, the invention is obvious over Lever in combination with Gray and Ito.

Based on the following, Applicant contends that the Examiner's position is not supportable, thus making the presently claimed invention unobvious over the cited references.

Applicant's Position

The present invention is characterized in that a zirconium compound and/or a germanium compound is combined with a foam with a closed-cell structure, and concurrently in case of

administration of a drug, the foam is contacted to a human body directly or indirectly, thus enhancing the effect of the drug.

Specifically, in the present invention, infrared rays, *e.g.*, from the sun or a human body, are collected into the activated foam, by means of a zirconium compound and/or a germanium compound. Since many closed cells exist in the activated foam of the present invention (20 to 30 cells/mm^2 in claim 6), compared with a foam having no cells, the activated foam has a much larger development area and can receive many infrared rays, *e.g.*, from the sun. This is clear from the results of Test 1 which shows "0" of a spectral transmission factor of infrared rays in the activated foam having a closed-cell structure of the present invention. (refer to Test 1, below)

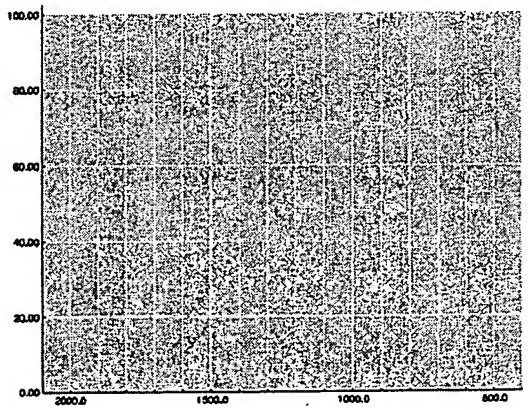
[Test 1]

Purpose of analysis: Measurement of spectral transmission factor in the infrared region

Instrument used: SHIMADU Infrared Spectroscopy IR-470.

Result of analysis: As shown in the graph below, spectral transmission factor from 2500 to 400 cm^{-1} (4 to 25 μm) was 0 %.

Spectral transmission factor in infrared region:



Further, when a spectral emittance was measured, it was found that the activated foam having a closed-cell structure of the present invention has a spectral emittance close to "1

(100%)" in the area from 4 to 25 μm, which is equal to a spectral emittance of virtual black body similar to a sunspot (refer to Test 2, below).

[Test 2]

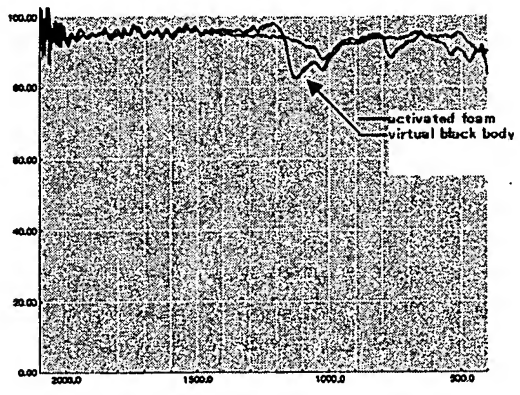
Purpose of analysis: Measurement of spectral emittance.

Instrument used: Heat radiation measuring device - SHIMADU Fourier Transform Infrared Spectroscopy, FTIR-4300.

Analysis method: Under a measurement temperature of 90°C, resolving power of 8 cm^{-1}, and integration time of 200, spectral emittance spectrum from 2500 cm^{-1} to 400 cm^{-1} (4μm to 25 μm) was measured.

Result of analysis: As shown in the graph below, spectral emittance from 4 to 25 μm was close to 100 %.

Measurement of Spectral Emittance:



It is well-known that an activated foam having an open cell structure or having no cells has a spectral emittance much lower than that of a virtual black body. Thus, Applicant submits that it can be understood that the activated foam of the present invention radiates the infrared rays to a body with very high emittance after changing wavelengths of the infrared rays received inside to the wavelengths of 4 to 25 μm which exerts a favorable influence on a human body.

Specifically, the infrared rays received inside collide with the walls of many cells inside the activated foam and repeat diffuse reflection and aggregation, and thereby infrared rays having wavelengths of 4 to 25 microns, which exert a favorable influence on a human body, are radiated toward the outside of the activated foam. These infrared rays resonate with the wavelengths of a human body to activate a water molecule and protein molecules in the body to enhance, through the excitometabolic effect, a natural healing power originally possessed by humans.

If the activated foam has an open cell structure, the foams are continued and therefore infrared rays pass through the activated foam as is and are not converted so as to have wavelengths of 4 to 25μm which exert a favorable influence on a human body, thus it is impossible to expect the effects as in the presently claimed invention.

In contrast, in the presently claimed invention, infrared rays are collected with a zirconium compound and/or a germanium compound, many infrared rays are received by the closed-cell structure, and are further converted into infrared rays having wavelengths of 4 to 25 microns, which exert a favorable influence on a human body by the closed-cell structure.

Differences between the Invention and the Cited References

Lever

Lever discloses a vulcanized rubber product which can maintain long-term antimicrobial characteristics due to a silver ion contained therein. The product contains zirconium as a carrier for the silver ion. Zirconium phosphate is preferable for keeping the silver ion stable (see Lever, column 4, lines 36-49).

Furthermore, Lever discloses rubber articles such as rubber mats including hard rubber mats and the like; rubber seals; rubber gaskets; rubber medical goods; rubber conveyor belts;

rubber belts; rubber wheels; rubber clothing; rubber shoes; rubber boots; rubber tubes; rubber hoses. (see Lever, column 9, lines 1-12).

Applicant submits that the reference describes "zirconium," "foam, closed-cell," and "examples of rubber articles." However, Lever is directed to vulcanized-rubber articles which can maintain antibiotic properties due to a silver ion, and not to an activated foam with the aim of enhancing the effect of a drug. Thus, the Lever reference is quite different when compared with the presently claimed invention.

More specifically, Lever describes "zirconium," but it is apparent that "zirconium" is utilized as a carrier capable of silver ion stability for the purpose of maintaining the antibiotic properties due to the silver ion. Thus, Lever's objective is different from the present claimed invention.

Furthermore, the reference describes "foam, closed cell", which is, however, referred to simply as an example of one of the rubber articles. That is, there is no limitation to a "foam, closed cell" in Lever, and Lever does not describe such an idea that infrared rays are received by the closed-cell structure and further converted into infrared rays having variable wavelengths.

Moreover, Lever describes rubber mats and the like as examples of "foam, closed cell," but there is no description about the idea that the activated foam is contacted to a human body when administrating a drug for the purpose of enhancing the effect of the drug.

Gray

The Gray reference discloses that the density of the foam may be varied by using different proportions of a blowing agent.

The reference also discloses that the density of the foam may be varied by using different proportions of a blowing agent, which is common knowledge in the art.

Ito

Ito describes a histone deacetylase inhibitor (HDACI) to be used for a cure for cancer, which is commonly known in the art. On the other hand, the presently claimed invention is related to the activated foam which can enhance the effect of such drugs.

As described, the above references are different from the presently claimed invention with respect to its use and effect. Additionally, there is no disclosure found within these references concerning the idea of enhancing the effect of drugs.

Therefore, the presently claimed invention is not contemplated in the cited prior art references.

Such a technical idea to combine a zirconium compound and/or a germanium compound with a closed-cell structure and contact the foam to a human body directly or indirectly concurrently with administration of drug for the purpose of enhancing the effect of the drug is not disclosed or suggested at all in the cited references.

Regarding amended claim 2, it is characterized in that carbon is included in addition to the technical elements contained in claim 1, discussed above. By adding carbon, strength of the activated foam increases, and it is possible to collect much more infrared rays *e.g.*, from the sun. Such a technical idea is not disclosed or suggested in the cited references, also discussed above.

In light of the above arguments and amended claims 1 and 2, Applicant submits that the assertions made by the Examiner regarding the above references are incorrect, thus making the Examiner's position not supportable. Accordingly, based on the differences between the presently claimed invention and the above references, the presently claimed invention is not obvious to one of ordinary skill in the art.

As outlined above, the secondary references, Gray and Ito, fail to remedy the deficiencies of the Lever reference. Therefore, even if the references were combined in the manner asserted by the Examiner, the result of such combination would still not suggest the claimed invention.

Since claims 3-13 and 15-17 ultimately depend from amended claims 1 and 2, these claims are unobvious over the cited references for the same reasoning above. Further, new claim 18, which is based on claim 1, is also not obvious for the above reasons.

Applicant respectfully requests reconsideration and withdrawal of the rejection.

Conclusion

Applicant respectfully submits that all of the objections and rejections raised by the Examiner have been overcome, and that the present application now stands in condition for allowance.

Should there be any outstanding matters that need to be resolved, the Examiner is respectfully requested to contact Paul D. Pyla at the telephone number below, in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized to charge payment or credit any overpayment to Deposit Account No. 23-0975 for any additional fees required under 37 C.F.R. §§1.16 or 1.17.

Respectfully submitted,

Tomizo YAMAMOTO

By Paul D. Pyla #59,228

Paul D. Pyla
Registration No. 59,228
Attorney for Applicant

WMC/PDP/acs
Washington, D.C. 20005-1503
Telephone (202) 721-8200
Facsimile (202) 721-8250
February 12, 2010

1b. [X] This Information Disclosure Statement is submitted

after the events of above paragraph 1a and prior to the mailing date of a final Office Action or a Notice of Allowance or an action which otherwise closes prosecution in the application, and thus:

(1) [] the certification of paragraph 2 below is provided, or

(2) [X] the fee of $180.00 specified in 37 CFR 1.17(p) is enclosed.

1c. [] This Information Disclosure Statement is submitted:

after the mailing date of a final Office Action or Notice of Allowance or action which otherwise closes prosecution in the application, and prior to payment of the issue fee, and thus:

the certification of paragraph 2 below is provided, and

the fee of $180.00 specified in 37 CFR 1.17(p) is enclosed.

2. It is hereby certified

a. [] that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the Statement, or

b. [] that no item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the person signing the certification after making reasonable inquiry, was known to any individual designated in §1.56(c) more than three months prior to the filing of the Statement.

3. [] Consideration of the following list of additional information (including any copending or abandoned U.S. application, prior uses and/or sales, etc.) is requested.